USGCRP Global Change Information System (GCIS)

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July 9, 2015
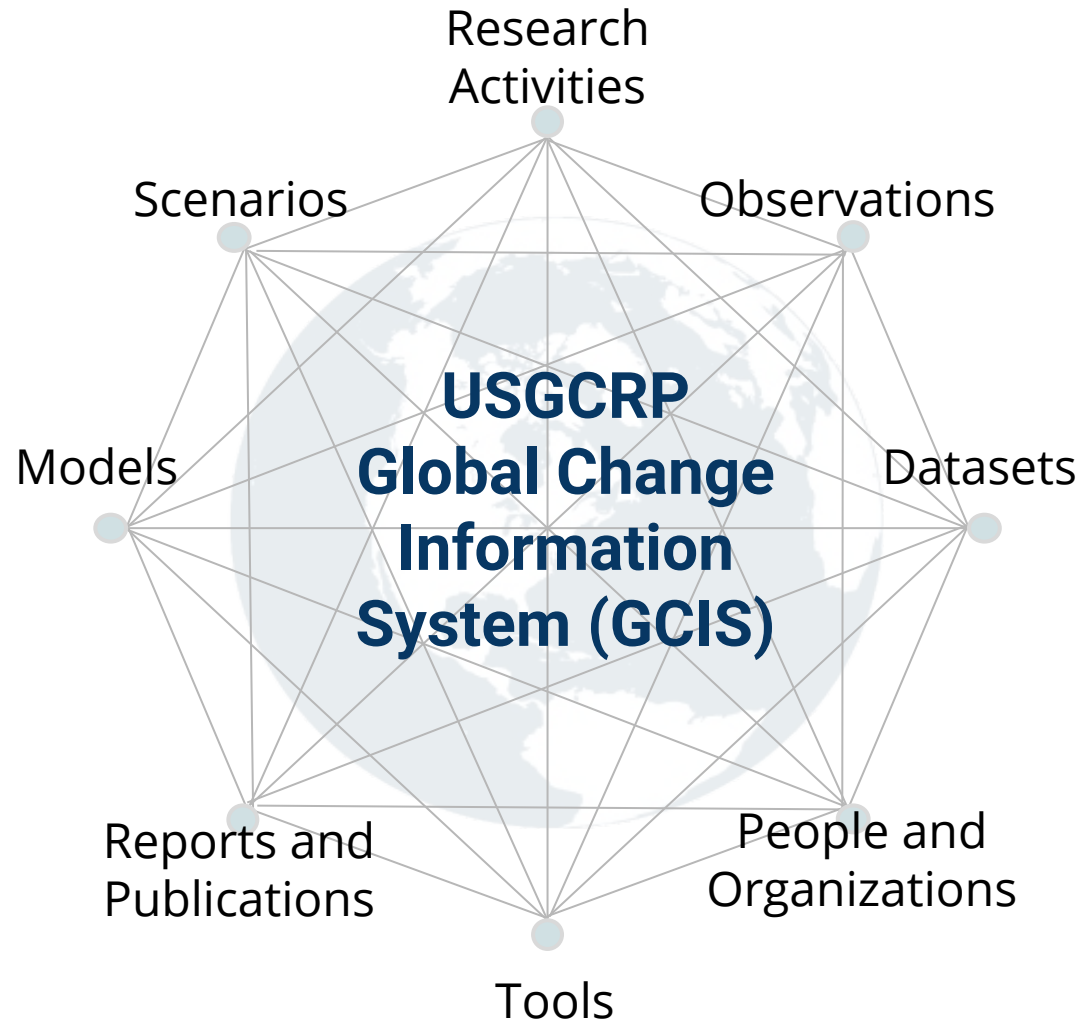
U.S. Global Change Research Program

What is GCIS?

GCIS **connects** global change information for scientists, decision makers and the public.

Research Activities

Scenarios

Observations

Models

USGCRP Global Change Information System (GCIS)

Datasets

Reports and Publications

People and Organizations

Tools

Why GCIS?

The U.S. Global Change Research Program ([USGCRP](#)) established the Global Change Information System (GCIS) to better **coordinate and integrate** the use of Federal information products on **changes in the global environment** and the implications of those changes for society.

GCIS History

May 2012   GCIS initial concept

Jan 2013   Draft National Climate Assessment 3 (NCA3) Release

May 2013   GCIS live (with Draft NCA3)

May 2014   NCA3 & GlobalChange.gov Release

July 2014   CEOS instruments & platforms

Nov 2014   Climate Models

Apr 2015   Indicator Release

NCA3

- Impacts
- Findings
- Topics

GCIS

- Structured Global Change Information
- Unique Identifiers

What does GCIS do?

Capture

Direct and automated retrieval from contributors, agency data centers, publishers, agency partners, etc.

Identify

Assign persistent, resolvable, controlled identifiers.

Organize

Capture and represent relationships between elements, across data center and agency boundaries.

Present

Provide interfaces to retrieve, search and mine structured metadata

Maintain

Develop tools and processes to ensure quality and integrity of content over time.

U.S. Global Change
Research Program

nca2014.globalchange.gov

Figure Metadata

Figure : observed-us-temperature-change

Observed U.S. Temperature Change

Figure 2.7

Cooperative Institute for Climate and Satellites - NC
Kenneth Kunkel
This figure appears in chapter 2 of the Climate Change Impacts in the United States: The Third National Climate Assessment report.

The colors on the map show temperature changes over the past 22 years (1991-2012) compared to the 1901-1960 average, and compared to the 1951-1980 average for Alaska and Hawai'i. The bars on the graphs show the average temperature changes by decade for 1901-2012 (relative to the 1901-1960 average) for each region. The far right bar in each graph (2000s decade) includes 2011 and 2012. The period from 2001 to 2012 was warmer than any previous decade in every region. (Figure source: NOAA NCDC / CICS-NC).

When citing this figure, please reference NOAA NCDC / CICS-NC.

This figure was created on August 03, 2013.
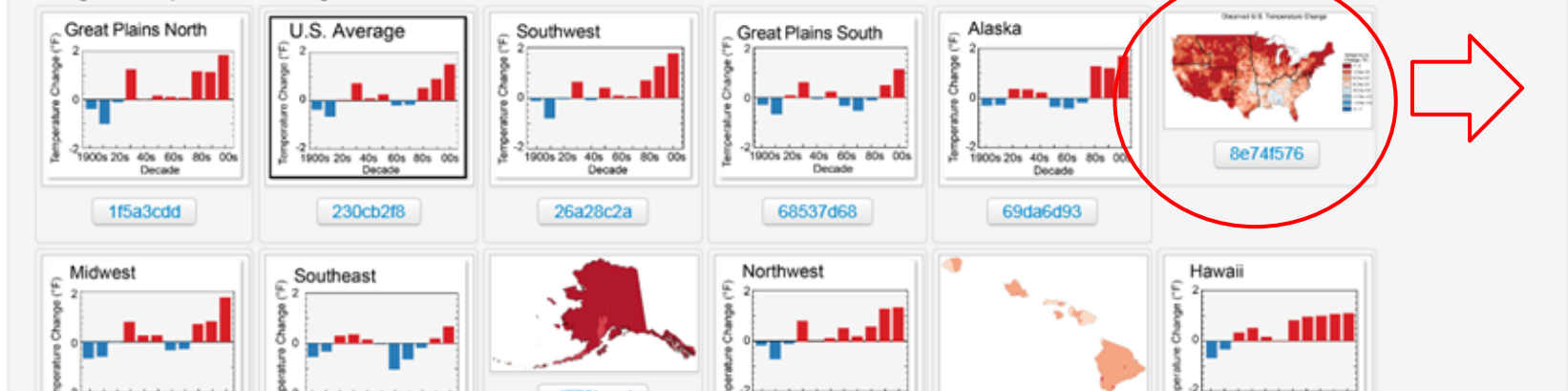
This figure is composed of these images :

Figure Metadata (cont.)

image : 8e74f576-a5af-46c0-b33a-f30072118b86

Observed U.S. Temperature Change Map - Contiguous U.S.

National Oceanic and Atmospheric Administration National Climatic Data Center
Russell Vose

The time range for this image is January 01, 1901 (00:00 AM) to December 31, 2012 (00:00 AM).

This image was created on August 01, 2013.

The spatial range for this image is 24.50° to 49.38° latitude, and -124.80° to -66.95° longitude.
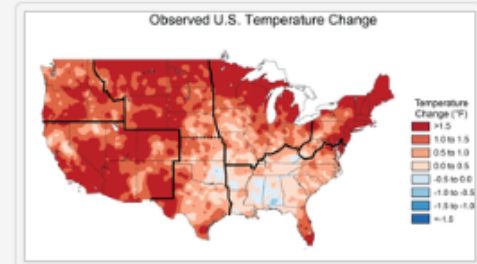
Attributes : Contiguous U.S., temperature, observed.

This image was derived from dataset nca3-cddv2-r1 using the activity 8e74f576-nca3-cddv2-r1-process.
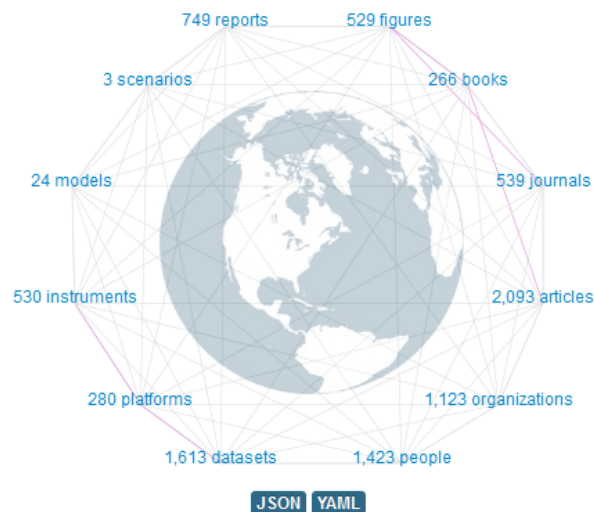
This image is part of this figure :

Dataset   Activity

2.7

data.globalchange.gov

Current GCIS Activities

Expanding observational and model assets

- Airborne missions, ground-based networks, hydrology monitoring networks, station data, ships
- Climate, land use, hydrologic, and other models

Interagency collaboration

- Identifying and listing high impact/high value datasets

Scaling up content

- Currently 2400 datasets, 280 platforms, 530 instruments, 1200 organizations, 1600 people, 820 reports, 540 journals

Supporting front ends for reports, assessments, etc:

- GlobalChange.gov, NCA 2014, Indicators, Upcoming Health Assessment

Continuous quality assurance

- Verifying against authoritative sources: e.g. Library of Congress, Web of Science

Continuous adaptability

- Extending information model to accommodate new concepts

Preparing for support of next NCA

GCIS Supports Federal Directives

"to develop and provide authoritative, easily accessible, usable, and timely data, information, and decision-support tools on climate preparedness and resilience."
[Executive Order 13653 - Preparing the United States for the Impacts of Climate Change]

"guidance to Federal agencies for ensuring and maximizing the quality, objectivity, utility, and integrity of information (including statistical information) disseminated by Federal agencies"
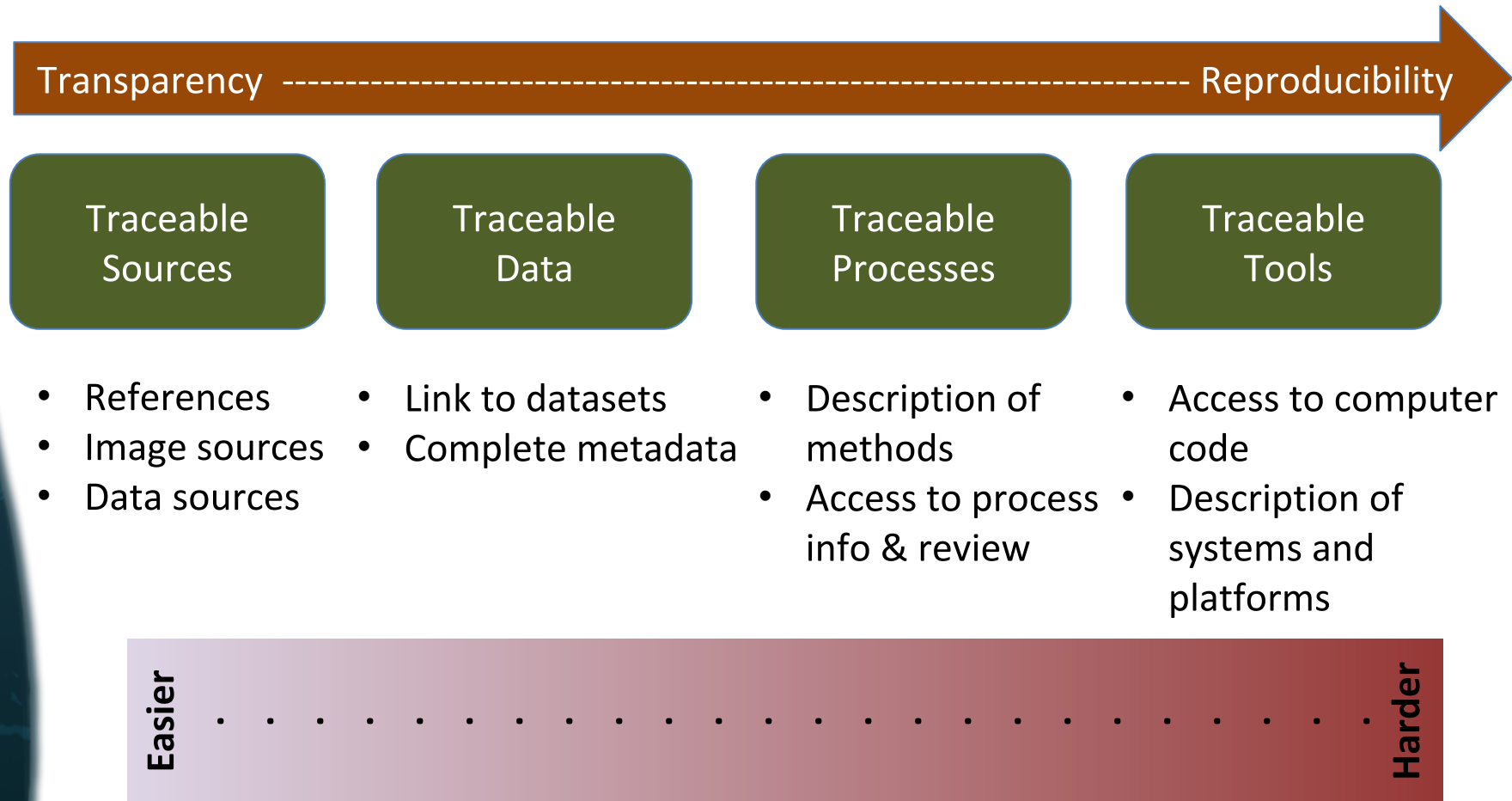[U.S. Information Quality Act (IQA) - Public Law 106-554, Section 515]

" The more important benefit of transparency is that the public will be able to assess how much an agency's analytic result hinges on the specific analytic choices made by the agency."
 [Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies; Notice; Republication, p. 8456]

What is Traceability?

Transparency -- Reproducibility

| Traceable Sources | Traceable Data | Traceable Processes | Traceable Tools |

- References
- Image sources
- Data sources

- Link to datasets
- Complete metadata

- Description of methods
- Access to process info & review

- Access to computer code
- Description of systems and platforms

Easier · **Harder**

GCIS and Climate Data and Tools (CDAT)

CDI and CRT may leverage GCIS for structured climate information

National Climate Assessment (NCA)
- Impacts
- Findings
- Topics

Climate Data Initiative (CDI)
- Data
- Resources
- Themes

Climate Resilience Toolkit (CRT)
- Tools
- Case studies
- Topics

Global Change Information System (GCIS)
- Structured Global Change Information
- Unique Identifiers

Geoplatform
- Spatial data

Data.gov
- All data

— Existing

--- Possible
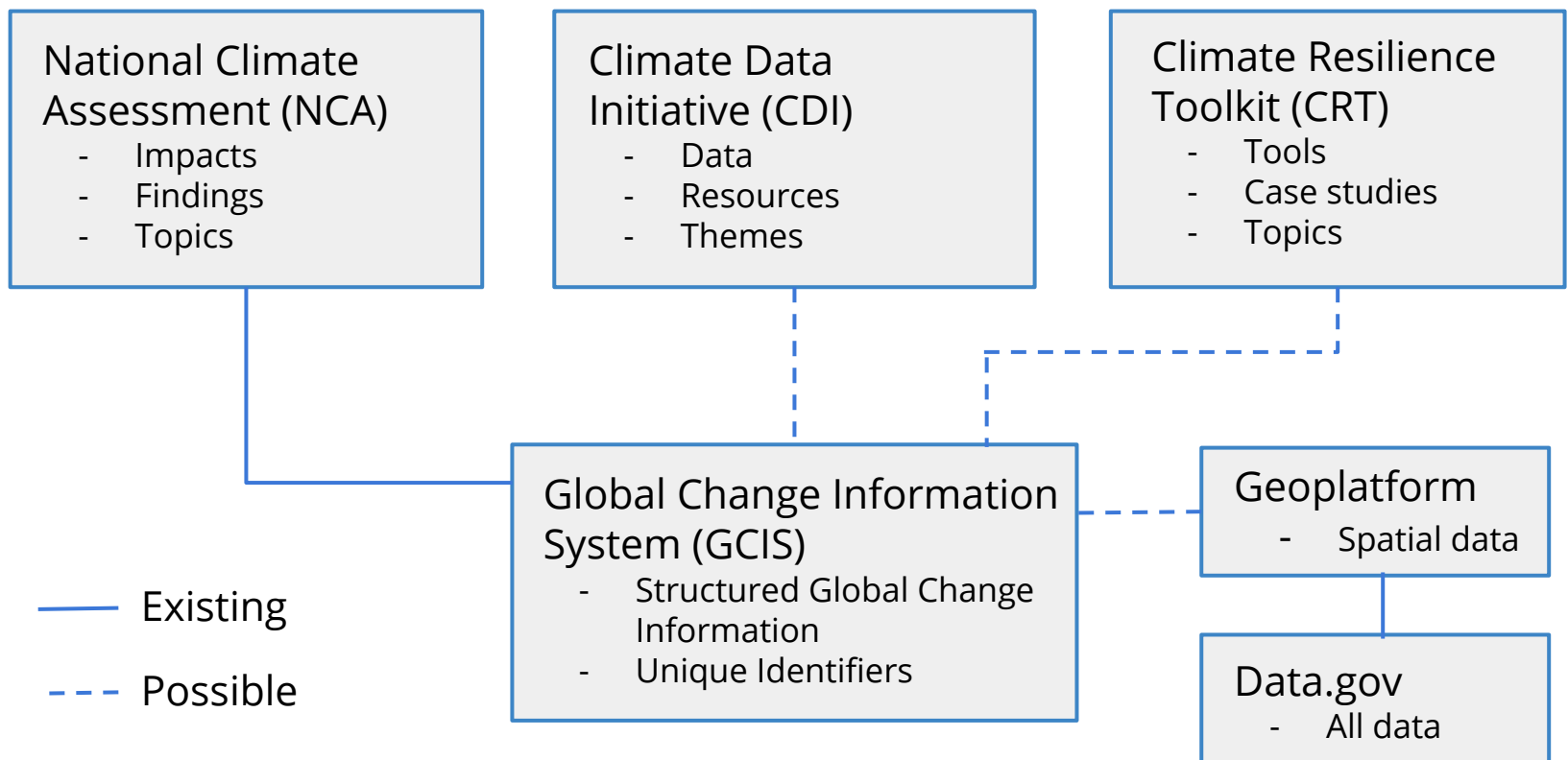
Thank You

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http://data.globalchange.gov